



# JPL One NASA Leader-Led Workshop

December 2004

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## **The NASA Vision**

To improve life here,  
To extend life to there,  
To find life beyond.

## **The NASA Mission**

To understand and protect our home planet,  
To explore the universe and search for life,  
To inspire the next generation of explorers  
... as only NASA can.



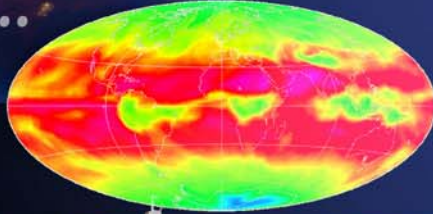
# The Advance of Science at NASA

*WE WILL BE...*

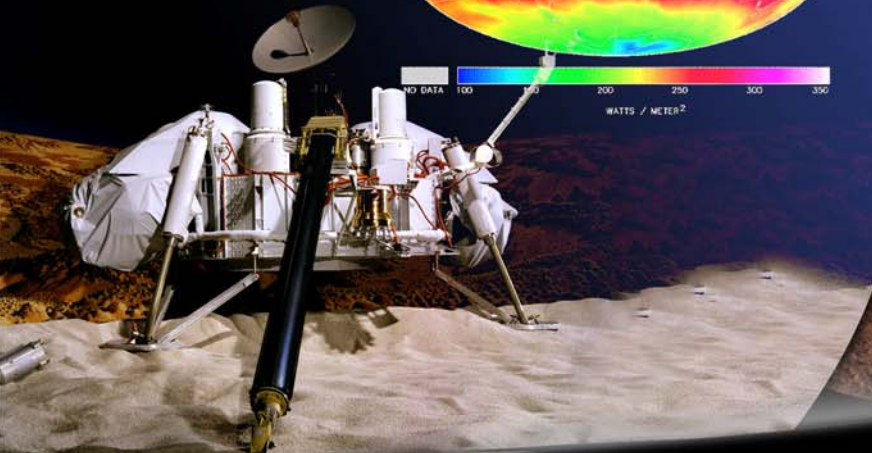
*WE ARE...*

*WE WERE...*

LONGWAVE RADIATION  
ERBS - NOAA-9 APRIL 1995  
PROJ: 6-30-88 hgmo



NO DATA 100 200 250 300 350  
WATTS / METER²





# A Look Back

15 years ago . . .

- The Office of Space Science and Applications had a budget of \$1.8 billion in FY 1989
- No great observatories had been launched
- Minimal Mars and planetary programs were in place
- EOS development was just beginning
- No frequent access competed programs were available to the scientific community





# Where We Are Today

By 2004 . . .

- Science Mission Directorate has a budget of \$5.5 billion in FY 2004
- All four great observatories have been launched and have delivered an unprecedented increase in our understanding of the universe
- Mars Exploration Program has had astonishing recent success with missions planned for every 26-month opportunity
- The first generation of EOS spacecraft have revolutionized our understanding of Earth's climate
- Discovery, Explorers, New Frontiers, ESSP, and NMP offer fully and openly competed opportunities to the community for high-value scientific investigations and technology validation
- A fully integrated interdisciplinary science program is in place



# A Look Ahead

15 years from now . . .

- The next generation of large observatories (JWST, SIM, TPF, etc.) will investigate the most important questions in modern astrophysics
- Samples of martian soil will have been returned to Earth and analyzed for signs of past or current life
- Humans will be close to returning to the moon; mission objectives and site selections will be planned using information gathered from the Lunar Exploration Program's armada of orbiters and landers
- Predictive power will be vastly improved with respect to Earth's climate and the interactions of the Earth-Sun system
- Dozens of additional missions will investigate the solar system and the universe
- We will achieve a deeper understanding of the solar system as a "system of systems" and of the origin, evolution, and destiny of the universe



**Space Science**

**Discovery**

**Earth Science**

**Prediction**

**Science Mission  
Directorate**

Comprehensive scientific investigations into the Origin, Evolution,  
and Destiny of the Earth, the Solar System, and the Universe





# Organization Principles

- Earth and Space Science have been very successful
- During the transformation process, the unique aspects of each office will be preserved to:
  - Protect the successful completion of on-going activities
  - Minimize disruption/dislocation of employees and their jobs
  - Strengthen the assets of both organizations
- Common elements and areas where there is a logical connection will be consolidated into a single operational unit
  - Earth-Sun System (including Earth Systems Science and Sun-Earth Connection), Solar System (including Mars), Universe (including Origins and Structure and Evolution of the Universe)
  - Education and Public Outreach
  - Mission and Systems Management
  - Business and Resource Management



# Science Mission Directorate

## Councils

Leadership Council  
Science Management Council  
Program Management Council  
Operations Council

**Associate Administrator (AA)**

**Deputy AA**

**Deputy AA  
For Management**

**Deputy AA  
For Programs**

AAA/Strategy, Policy & Int'l  
AAA/Science  
AAA/Technology  
AAA/Exploration Mission Int.  
Sr. Policy Advisor

**Education Officer**

*Mission Support*

**NASA Management  
Office**

**Administrative  
Processes**

*Mission*

**Earth-Sun  
System**

**Solar  
System**

**Universe**

*Mission Enabling*

**Business  
Management**

**NASA Centers**

**Mission & Systems  
Management**

**JPL**

**GSFC**

**ARC**

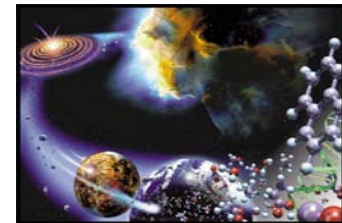


# Why Transform?

- Position NASA science endeavors to support and benefit from the Exploration Vision
- Many opportunities for science synergy
  - Earth as a natural laboratory for biological processes
  - Heal the artificial split at the top of the stratosphere
  - Integrated view of the Sun and Earth as a system
  - Earth as a planet in the solar system
- Similar needs & processes for:
  - Engagement of the external scientific community in planning
  - Sponsoring scientific research
  - Mission solicitation, selection, and management
  - Advanced technology
  - Business management
  - Education and Public Outreach

# Science Mission Directorate Fully Supports NASA's Mission

- ***Understand and Protect Our Home Planet*** by using our view from space to study the Earth system and improve prediction of Earth system change
- ***Explore the Universe and Search for Life*** by continuing scientific investigations into the origin, evolution, and destiny of the universe and our solar system, and by applying our scientific understanding of the Earth system to the identification and study of Earth-like planets around other stars
- ***Inspire the Next Generation of Explorers*** by providing Earth and Space science content and training to educators, and by sponsoring the education and early careers of Earth scientists, astronomers, physicists...







# Challenges Ahead

- Make the connections between Earth Science, Space Science and the Exploration Vision
- Merge and maintain the foundation for a comprehensive, flexible, Education and Public Outreach Program
- Continue forging partnerships that will sustain and advance our science
- Provide the excitement that motivates our next generation of scientists, engineers, and decision-makers



# Conclusion

- Significant work remains to effectively consolidate the old Earth and Space Science Enterprises
- Transformation will require community involvement
  - Advisory committees, Academy involvement anticipated, and you, but detailed plans remain open
- Preserve and maintain high standards for successful activities